



DEPARTMENT OF THE AIR FORCE

59TH MEDICAL WING (AETC)  
LACKLAND AIR FORCE BASE TEXAS

10 MAR 2016

MEMORANDUM FOR SGVT

ATTN: CAPT ANDREW PAULUS

FROM: 59 MDW/SGVU

SUBJECT: Professional Presentation Approval

1. Your paper, entitled Evaluation of Total Daily Dose and Glycemic Control for Patients on U-500 Insulin Admitted to the Hospital presented at SURF Conference, San Antonio, TX 20 May 2016 with MDWI 41-108, and has been assigned local file #16114.
2. Pertinent biographic information (name of author(s), title, etc.) has been entered into our computer file. Please advise us (by phone or mail) that your presentation was given. At that time, we will need the date (month, day and year) along with the location of your presentation. It is important to update this information so that we can provide quality support for you, your department, and the Medical Center commander. This information is used to document the scholarly activities of our professional staff and students, which is an essential component of Wilford Hall Ambulatory Surgical Center (WHASC) internship and residency programs.
3. Please know that if you are a Graduate Health Sciences Education student and your department has told you they cannot fund your publication, the 59th Clinical Research Division may pay for your basic journal publishing charges (to include costs for tables and black and white photos). We cannot pay for reprints. If you are 59 MDW staff member, we can forward your request for funds to the designated wing POC.
4. Congratulations, and thank you for your efforts and time. Your contributions are vital to the medical mission. We look forward to assisting you in your future publication/presentation efforts.

LINDA STEEL-GOODWIN, Col, USAF, BSC  
Director, Clinical Investigations & Research Support

PROCESSING OF PROFESSIONAL MEDICAL RESEARCH PUBLICATIONS/PRESENTATIONS		
TO: Clinical Research Division/SGVU (59th CSPG/SGVU)	FROM: (Name/Rank/Office Symbol) Andrew Paulus/Capt/SGVT	PROTOCOL NUMBER: C.2014.152d
PROTOCOL TITLE Evaluation of Total Daily Dose and Glycemic Control for Patients on U-500 Insulin Admitted to the Hospital		
1. TITLE OF MATERIAL TO BE PUBLISHED OR PRESENTED Evaluation of Total Daily Dose and Glycemic Control for Patients on U-500 Insulin Admitted to the Hospital		
2. IS THIS MATERIAL CLASSIFIED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
3. IS THIS MATERIAL SUBJECT TO ANY LEGAL RESTRICTIONS FOR PUBLICATION OR PRESENTATION THROUGH A COLLABORATIVE RESEARCH AND DEVELOPMENT AGREEMENT (CRADA), MATERIAL TRANSFER AGREEMENT (MTA), INTELLECTUAL PROPERTY RIGHTS AGREEMENT, ETC.? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (NOTE: If the answer is 'YES' then attach a copy of the Agreement to the Publications/Presentations Request Form)		
4. MATERIAL IS FOR (Check appropriate box or boxes for approval with this request.) (ATTACH COPY OF MATERIAL TO BE PUBLISHED/PRESENTED)		
<input type="checkbox"/>	PUBLICATION/JOURNAL (List intended publication/journal)	
<input type="checkbox"/>	PUBLISHED ABSTRACT (List intended journal)	
<input checked="" type="checkbox"/>	POSTER (To be demonstrated at meeting/Name of Meeting, City, State, and Date of Meeting) SURF Conference, San Antonio, TX, 20 May 2016	
<input type="checkbox"/>	PLATFORM PRESENTATION (At civilian institutions/Name of Meeting, State, and Date of Meeting)	
<input type="checkbox"/>	OTHER (Describe; Name of Meeting, City, State, and Date of Meeting)	
POINT OF CONTACT		
5. WHO IS THE PRIMARY WHASC POINT OF CONTACT? (Last, First, M.I.) (Include email) andrew.o.paulus.mil@mail.mil		DUTY PHONE/PAGER No. 210-916-2770
AUTHORSHIP AND CO-AUTHOR(S) (List in the order they will appear in the manuscript)		
LAST NAME, FIRST NAME AND MI.	GRADE/RANK	SQUADRON/GROUP/OFFICE SYM
a. Primary/corresponding author Paulus, Andrew	Capt	959 CSPS/SGVT
b. Colburn, Jeffrey	Maj	959 MDOS/SGO5E
c. Lewi, Jack	COL	MCHE-MDE
d. Folaron, Irene	Lt Col	959 MDOS/SGO5E
e. Graybill, Sky	Maj	MCHE-MDE
f. Davis, Richard	Maj	959 CSPS/SVGT
g. Beckman, Darrick	Maj	959 CSPS/SVGT
h. True, Mark	Col	959 MDOS/ SGO5E
i.		
j.		
I CERTIFY ANY HUMAN OR ANIMAL RESEARCH RELATED STUDIES WERE APPROVED AND PERFORMED IN STRICT ACCORDANCE WITH 32 CFR 219, AFMAN 40-401_IP AND 59 MDWI 41-108. I HAVE READ THE FINAL VERSION OF THE ATTACHED MATERIAL AND CERTIFY THAT IT IS AN ACCURATE MANUSCRIPT FOR PUBLICATION AND/OR PRESENTATION.		
AUTHOR'S PRINTED NAME/RANK/GRADE Andrew Paulus/ Capt/ O-3	AUTHOR'S SIGNATURE PAULUS.ANDREW.O.1299683520,	DATE 21 Jan 2016
COMMANDER'S PRINTED NAME, RANK Mark True/Col/ O-6	COMMANDER'S SIGNATURE TRUE.MARK.W.1119949757	DATE 21 Jan 2016

## PROCESSING OF PROFESSIONAL MEDICAL RESEARCH PUBLICATIONS/PRESENTATIONS

## 1st ENDORSEMENT (SGVU Use Only)

TO: Clinical Research Division 59TH CSPG/SGVU (Contact 292-7141 for email instructions)	1. DATE RECEIVED 3/3/2016	2. ASSIGNED PROCESSING REQUEST FILE NUMBER 16114
3. DATE REVIEWED 4 Mar 2016	4. DATE FORWARDED TO PA	
5. AUTHOR CONTACTED FOR RECOMMENDED OR NECESSARY CHANGES		<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES (If yes, give date) _____ <input type="checkbox"/> N/A
6. COMMENTS <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED		
The article is approved.		

PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER Rocky Calcote, PhD Clinical Research Administrator	SIGNATURE OF REVIEWER CALCOTE.ROCKY.D.1178245844	DATE 4 Mar 2016
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## 2ND ENDORSEMENT (PA Use Only)

TO: OFFICE OF PUBLIC AFFAIRS (PA)	1. DATE RECEIVED 8 March 2016	2. DATE FORWARDED TO 59TH CSPG/SGVU 8 March 2016
3. COMMENTS <input checked="" type="checkbox"/> APPROVED (In compliance with security and policy review directives)		<input type="checkbox"/> DISAPPROVED
The article is approved.		

PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER Christopher Carwile, TSgt/E-6, NCOIC, PA	SIGNATURE OF REVIEWER CARWILE.CHRISTOPHER.STEWART.1280477229,	DATE 8 Mar 2016
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## 3RD ENDORSEMENT (SGVU Use Only)

TO: 59 CSPG/SGVU	1. DATE RECEIVED
2. SENIOR AUTHOR NOTIFIED BY PHONE OF APPROVAL OR DISAPPROVAL <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> COULD NOT BE REACHED <input type="checkbox"/> LEFT MESSAGE	
3. DATE WRITTEN NOTICE OF APPROVAL AND CLEARNCE MAILED TO AUTHOR:	
4. COMMENTS <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED	
The article is approved.	

PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	SIGNATURE OF REVIEWER	DATE
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## Evaluation of Total Daily Dose and Glycemic Control for Patients on U-500 Insulin Admitted to the Hospital

Andrew O. Paulus M.D., Jeffrey A. Colburn M.D., Jack E. Lewi M.D., Irene Folaron M.D., Sky D. Graybill M.D., Richard P. Davis M.D., Darrick J. Beckman M.D., Mark W. True M.D.

**Introduction** The number of patients using U-500 regular insulin has significantly increased in recent years. These patients are severely insulin resistant requiring high doses of insulin to achieve glycemic control. However, it has been observed that a patient's insulin requirements may dramatically decrease upon admission to the hospital. The medical literature is sparse on this issue, with no formal published guidelines. Therefore, we sought to systematically investigate this phenomenon in our institution.

**Methods** We performed a retrospective chart review of patients with U-500 insulin outpatient regimens who were admitted to the San Antonio Military Medical Center over a five-year period. Each patient's outpatient total daily dose (TDD) of insulin was compared to the average inpatient TDD. The outpatient estimated average glucose (eAG) was calculated from the HgbA1c and compared to the average inpatient glucose level.

**Results** We collected data on 27 patients with a total of 62 separate admissions. The average age was 64.4 years with a mean body mass index of  $38.9 \text{ kg/m}^2$  and eAG of 203mg/dl [74 – 109] (HgbA1c of 8.7% [0 – 5.6]). All patients were converted from U-500 to various U-100 insulin regimens upon admission. The average TDD of insulin received in the hospital was lower than their outpatient TDD, 91 units vs. 337 units ( $p < 0.001$ ) or 27% of their outpatient insulin dose. Overall, 89% of patients received  $\leq 50\%$  of their outpatient TDD while in the hospital. The average inpatient glucose was slightly higher than the outpatient eAG, 234 mg/dl vs. 203 mg/dl ( $p < 0.003$ ).

**Discussion** Patients using U-500 insulin routinely have their TDD of insulin reduced upon admission in our institution. Possible factors for decreased insulin requirements include controlled hospital diet, NPO status, and strict adherence to insulin injections by nursing staff. U-500 insulin dosing is prone to errors in the hospital setting, so conversion to U-100 insulin with a dose reduction is a preferred option. Despite a significant reduction in insulin TDD, these patients had clinically similar glucose levels. Therefore, we propose that it is reasonable to convert U-500 patients to U-100 insulin on admission with starting doses between 25 to 50% of their home TDD. Patients' glucose should be closely monitored and insulin titrated as needed to maintain adequate glucose control.

**Conclusion** Patients taking U-500 insulin as an outpatient should be converted to a U-100 basal-bolus regimen at 25 to 50% of their home TDD upon hospital admission. Further prospective trial data is needed to best evaluate the ideal approach to this situation.

The views expressed are those of the authors and do not reflect the official views or policy of the Department of Defense, or its Components.



**DEPARTMENT OF THE AIR FORCE  
AIR EDUCATION AND TRAINING COMMAND**

7 March 2016

**MEMORANDUM FOR 59 CSPG/SGVU**  
**ATTN: Capt Andrew Paulus**  
**FROM: 502 ISG/JA (1Lt Heather Slawson)**  
**SUBJECT: Ethics Review for Poster Approval Request**

- 1. BLUF:** A request for a legal review of a poster presentation titled "Evaluation of Total Daily Dose and Glycemic Control for Patients on U-500 Insulin Admitted to the Hospital" was submitted by Capt Andrew Paulus. Capt Paulus and his co-authors plan to present this research at the SURF Conference in San Antonio, TX on 20 May 2016. The abstract included the required disclaimer. The disclaimer must also be included on the poster that will be displayed for presentation. A Public Affairs review will be required if it has not already been obtained. There are no conflicts of interest issues with the poster presentation at this conference.
- 2. FACTS:** An abstract titled "Evaluation of Total Daily Dose and Glycemic Control for Patients on U-500 Insulin Admitted to the Hospital" was submitted for poster presentation. The authors plan to present this research at the SURF Conference in San Antonio, TX on 20 May 2016.
- 3. LAWS AND REGULATIONS:** DoD 5500.07-R, Joint Ethics Regulation (JER), section 3-307 lays out rules governing "Teaching, Speaking and Writing." If the presentation will "deal in significant part with any ongoing or announced policy, program or operation" of the Air Force, the presenter is required to include a disclaimer that states the "views presented are those of the speaker or author and do not necessarily represent the views of DoD or its Components."
- 4. ANALYSIS:** Although the presentation does not "deal in significant part with any ongoing or announced policy, program or operation" of the Air Force, the presenters' affiliation and/or ranks will be included in the abstract and poster presentation. Additionally, the research and information to be discussed in the presentation was obtained as part of their military medical practice. The authors included the required disclaimer that the views presented are those of the author and do not necessarily represent the views of DoD or its Components. The disclaimer must also be included on the poster. A Public Affairs review will be needed if it has not already been obtained. There are no apparent conflicts of interest that would prohibit presentation of this research at this conference.

5. CONCLUSION: The abstract presented for review included the disclaimer required by the JER. The disclaimer must also be included on the poster. If you have any questions, please call Lt Heather Slawson at 671-5728.

*Heather Slawson*  
HEATHER M. SLAWSON, 1Lt, USAF  
Assistant Staff Judge Advocate

I concur.

*Arlene Christilles*  
ARLENE R. CHRISTILLES  
Chief, Civil Law